

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
5 August 2004 (05.08.2004)

PCT

(10) International Publication Number
WO 2004/066355 A3

(51) International Patent Classification⁷: **G06F 11/30**,
H04L 9/00, 9/32

(21) International Application Number:
PCT/US2004/001581

(22) International Filing Date: 20 January 2004 (20.01.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/440,734 17 January 2003 (17.01.2003) US

(71) Applicant (for all designated States except US): **THOMSON LICENSING S.A.** [FR/FR]; 46, Quai A. Le Gallo, Boulogne 92648 (FR).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **BOUILLET, Aaron** [US/US]; 1520 Persimmon Place, Noblesville, Indiana 46060 (US).

(74) Agents: **TRIPOLI, Joseph et al.**; c/o Thomson Licensing, Inc., Two Independence Way, Suite 200, Princeton, New Jersey 08540 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

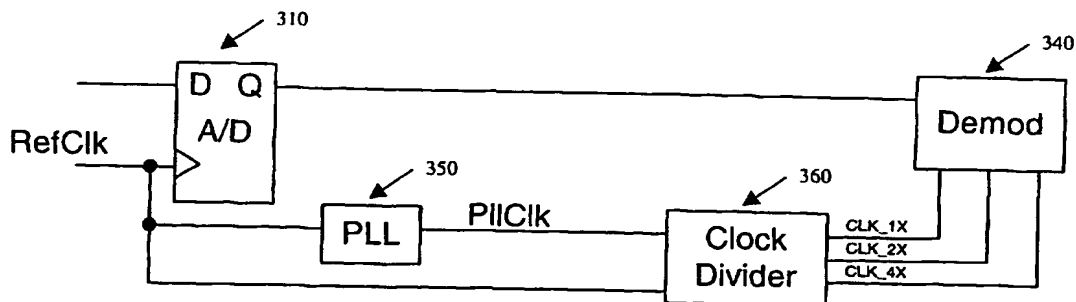
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
11 November 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A METHOD FOR USING A SYNCHRONOUS SAMPLING DESIGN IN A FIXED-RATE SAMPLING MODE



(57) Abstract: The present application generally relates to apparatuses such as television signal processing apparatus that process radio frequency signals. More specifically, the present application is particularly useful in integrated circuits that must combine circuitry operating in a synchronous-sampling mode that must be adapted for use with a fixed rate sampling mode application. According to an exemplary embodiment, the television signal processing apparatus 100 comprises a source of a fixed rate digital signal 220, signal processing circuitry 240 operating in a synchronous-sampling mode wherein the signal processing circuitry 240 comprises a signal representing a symbol rate, and an interpolator 230 for processing the fixed rate digital signal to yield samples at the symbol rate.

WO 2004/066355 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/01581

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06F 11/30; H04L 9/00, 9/32

US CL : 713/200

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 713/200

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,943,369 (Knutson et al) 24 August 1999 (24.08.1999), column 1 lines 23-25; column 2 lines 11-14; column 10 line 58-62; column 4 line 63-66; column 10 line 1-3	1-3, 6-11, 14-15 and 18-20
Y		
Y	US 3,943,346 (Urkowitz et al) 9 March 1976 (09.03.1976), column 8 line 53-67; column 2 line 26-28	4-5, 12-13, 16-17 4, 12 and 16
Y	US 2002/0154620 (Azenkot et.al) 24 October 2002 (24.10.2002), paragraph [0375]	5, 13 and 17

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

30 August 2004 (30.08.2004)

Date of mailing of the international search report

13 SEP 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Ayaz R Sheikh

Telephone No. 703-305-0900